



## Colorado Department of Labor and Employment

LEED - NC Version 2.0  
Certified August 1, 2005  
Project Number 1887

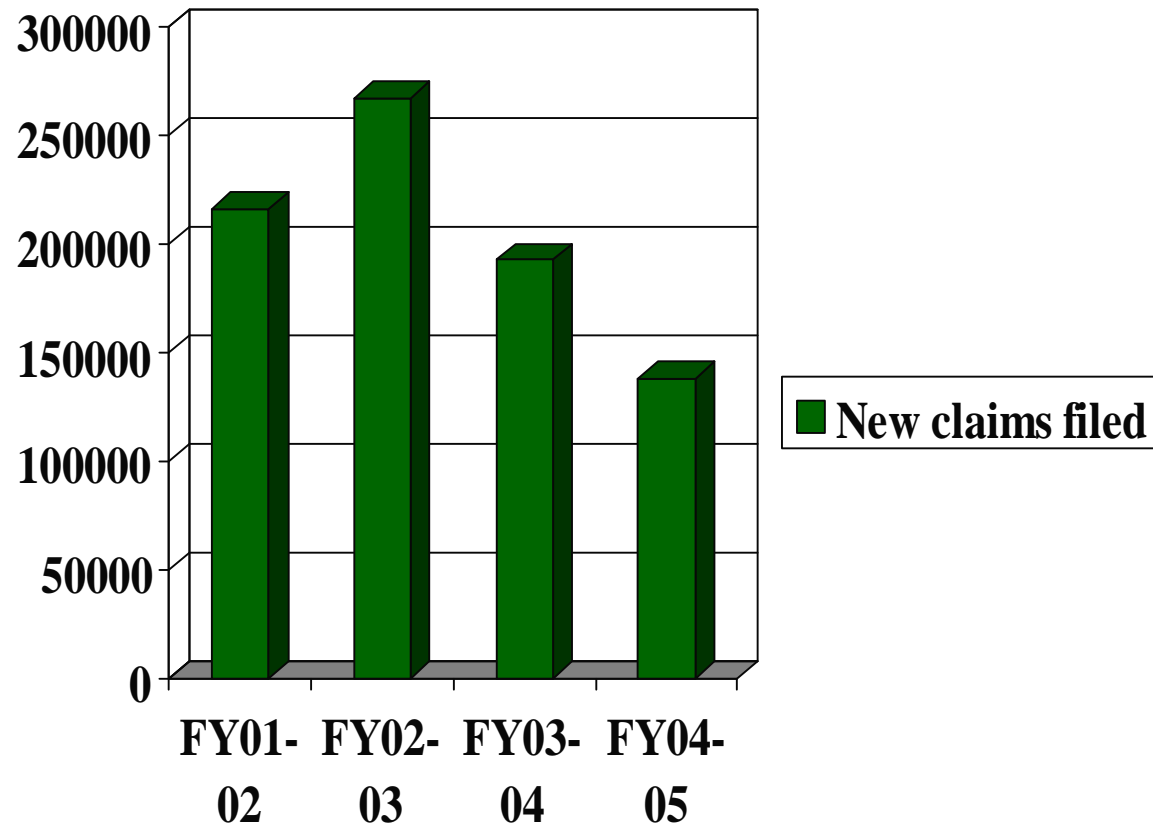
251 East 12th Avenue  
Denver, Colorado

*March 2006*



## Colorado Department of Labor and Employment Unemployment Insurance Activity

An income stabilizer for both the worker and the economy. Helps prevent secondary unemployment.





# Pre-Project

- ◆ *Need*
- ◆ *Opportunity*
- ◆ *Timing*
- ◆ *Political*
- ◆ *Expertise*

## Why state agencies should lead with LEED®

- ◆ *No impact to budget, schedule, or program.*
- ◆ *Cost savings through energy efficiency.*
- ◆ *Extend the lifespan of existing building.*
- ◆ *Employee wellness.*
- ◆ *Good design, common sense.*
- ◆ *Quality of architects, engineers, contractors.*
- ◆ *Governor Owens' Greening State Government Executive Order.*

*LEED is a registered trademark of the U.S. Green Building Council [www.usgbc.org/leed](http://www.usgbc.org/leed)*

## CDLE Project Facts

- ◆ *40,000 square foot addition.*
- ◆ *Original construction 1956.*
- ◆ *Approximate cost per square foot = \$100.*
- ◆ *Federally funded, prevailing wage.*
- ◆ *180 Unemployment Insurance employees (450 total).*
- ◆ *Conference, training, break rooms.*
- ◆ *Ground breaking December, 2003.*
- ◆ *Occupancy December, 2004.*







# LEED-NC

## State of Colorado Department of Labor and Employment

### LEED® Project # 1887

#### LEED Version 2 Certification Level: CERTIFIED

#### August 1, 2005

### 28 Points Achieved

Possible Points: 69

Certified 26 to 32 points Silver 33 to 38 points Gold 39 to 51 points Platinum 52 or more points

#### 6 Sustainable Sites Possible Points: 14

Y	Prereq 1	Erosion & Sedimentation Control	
1	Credit 1	Site Selection	1
1	Credit 2	Urban Redevelopment	1
	Credit 3	Brownfield Redevelopment	1
1	Credit 4.1	Alternative Transportation, Public Transportation Access	1
	Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	1
	Credit 4.3	Alternative Transportation, Alternative Fuel Refueling Stations	1
	Credit 4.4	Alternative Transportation, Parking Capacity	1
	Credit 5.1	Reduced Site Disturbance, Protect or Restore Open Space	1
	Credit 5.2	Reduced Site Disturbance, Development Footprint	1
	Credit 6.1	Stormwater Management, Rate and Quantity	1
	Credit 6.2	Stormwater Management, Treatment	1
1	Credit 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-Roof	1
1	Credit 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof	1
1	Credit 8	Light Pollution Reduction	1

#### 1 Water Efficiency Possible Points: 5

Y			
	Credit 1.1	Water Efficient Landscaping, Reduce by 50%	1
	Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1
	Credit 2	Innovative Wastewater Technologies	1
1	Credit 3.1	Water Use Reduction, 20% Reduction	1
	Credit 3.2	Water Use Reduction, 30% Reduction	1

#### 4 Energy & Atmosphere Possible Points: 17

Y			
Y	Prereq 1	Fundamental Building Systems Commissioning	
Y	Prereq 2	Minimum Energy Performance	
Y	Prereq 3	CFC Reduction in HVAC&R Equipment	
2	Credit 1.1	Optimize Energy Performance, 20% New / 10% Existing	2
	Credit 1.2	Optimize Energy Performance, 30% New / 20% Existing	2
	Credit 1.3	Optimize Energy Performance, 40% New / 30% Existing	2
	Credit 1.4	Optimize Energy Performance, 50% New / 40% Existing	2
	Credit 1.5	Optimize Energy Performance, 60% New / 50% Existing	2
	Credit 2.1	Renewable Energy, 5%	1
	Credit 2.2	Renewable Energy, 10%	1
	Credit 2.3	Renewable Energy, 20%	1
1	Credit 3	Additional Commissioning	1
	Credit 4	Ozone Depletion	1
	Credit 5	Measurement & Verification	1
1	Credit 6	Green Power	1

#### 5 Materials & Resources Possible Points: 13

Y	Prereq 1	Storage & Collection of Recyclables	
	Credit 1.1	Building Reuse, Maintain 75% of Existing Shell	1
	Credit 1.2	Building Reuse, Maintain 100% of Existing Shell	1
	Credit 1.3	Building Reuse, Maintain 100% Shell & 50% Non-Shell	1
1	Credit 2.1	Construction Waste Management, Divert 50%	1
	Credit 2.2	Construction Waste Management, Divert 75%	1
	Credit 3.1	Resource Reuse, Specify 5%	1
	Credit 3.2	Resource Reuse, Specify 10%	1
1	Credit 4.1	Recycled Content	1
1	Credit 4.2	Recycled Content	1
1	Credit 5.1	Local/Regional Materials, 20% Manufactured Locally	1
	Credit 5.2	Local/Regional Materials, of 20% Above, 50% Harvested Locally	1
	Credit 6	Rapidly Renewable Materials	1
	Credit 7	Certified Wood	1

#### 8 Indoor Environmental Quality Possible Points: 15

Y	Prereq 1	Minimum IAQ Performance	
Y	Prereq 2	Environmental Tobacco Smoke (ETS) Control	
1	Credit 1	Carbon Dioxide (CO <sub>2</sub> ) Monitoring	1
	Credit 2	Increase Ventilation Effectiveness	1
	Credit 3.1	Construction IAQ Management Plan, During Construction	1
1	Credit 3.2	Construction IAQ Management Plan, Before Occupancy	1
1	Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	1
1	Credit 4.2	Low-Emitting Materials, Paints	1
1	Credit 4.3	Low-Emitting Materials, Carpet	1
	Credit 4.4	Low-Emitting Materials, Composite Wood	1
1	Credit 5	Indoor Chemical & Pollutant Source Control	1
	Credit 6.1	Controllability of Systems, Perimeter	1
	Credit 6.2	Controllability of Systems, Non-Perimeter	1
1	Credit 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	1
	Credit 7.2	Thermal Comfort, Permanent Monitoring System	1
	Credit 8.1	Daylight & Views, Daylight 75% of Spaces	1
1	Credit 8.2	Daylight & Views, Views for 90% of Spaces	1

#### 4 Innovation & Design Process Possible Points: 5

Y			
1	Credit 1.1	Innovation in Design: Green Housekeeping	1
1	Credit 1.2	Innovation in Design: Exemplary Performance of MRc5.1	1
1	Credit 1.3	Innovation in Design: Exemplary Performance of MRc4.1/4.2	1
	Credit 1.4	Innovation in Design:	1
1	Credit 2	LEED® Accredited Professional	1

# LEED-NC Certified

	Total Possible	Attempted	<b>Achieved</b>
Sustainable Sites	14	6	<b>6</b>
Water Efficiency	5	3	<b>1</b>
Energy & Atmosphere	17	6	<b>4</b>
Materials & Resources	13	5	<b>5</b>
Indoor Environmental Quality	15	10	<b>8</b>
Innovation & Design	4	4	<b>4</b>
<b>TOTAL</b>	<b>69</b>	<b>34</b>	<b>28</b>

*Certified 26 to 32 points Silver 33 to 38 points Gold 39 to 51 points Platinum 52 or more*



# Sustainable Sites

Achieved 6 points

Credit 1

*Site selection*



# Sustainable Sites

Achieved 6 points

Credit 2

*Urban  
redevelopment*

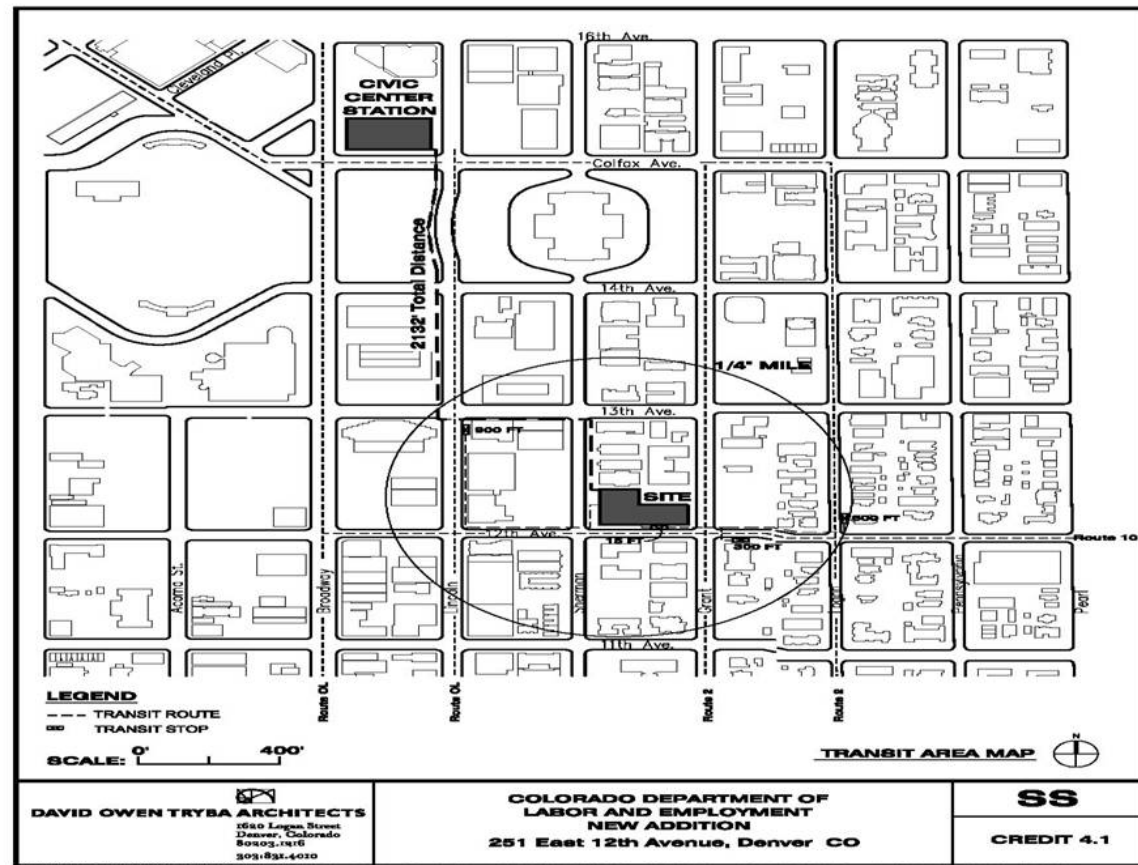


# Sustainable Sites

Achieved 6 points

Credit 4.1

*Alternative  
transportation,  
public  
transportation  
access*



# Sustainable Sites

Achieved 6 points

Credit 7.1

*Landscape  
and exterior  
design reduce  
heat islands,  
non-roof*



# Sustainable Sites

Achieved 6 points

Credit 7.2

*Landscape and  
exterior design  
reduce heat  
islands, roof*



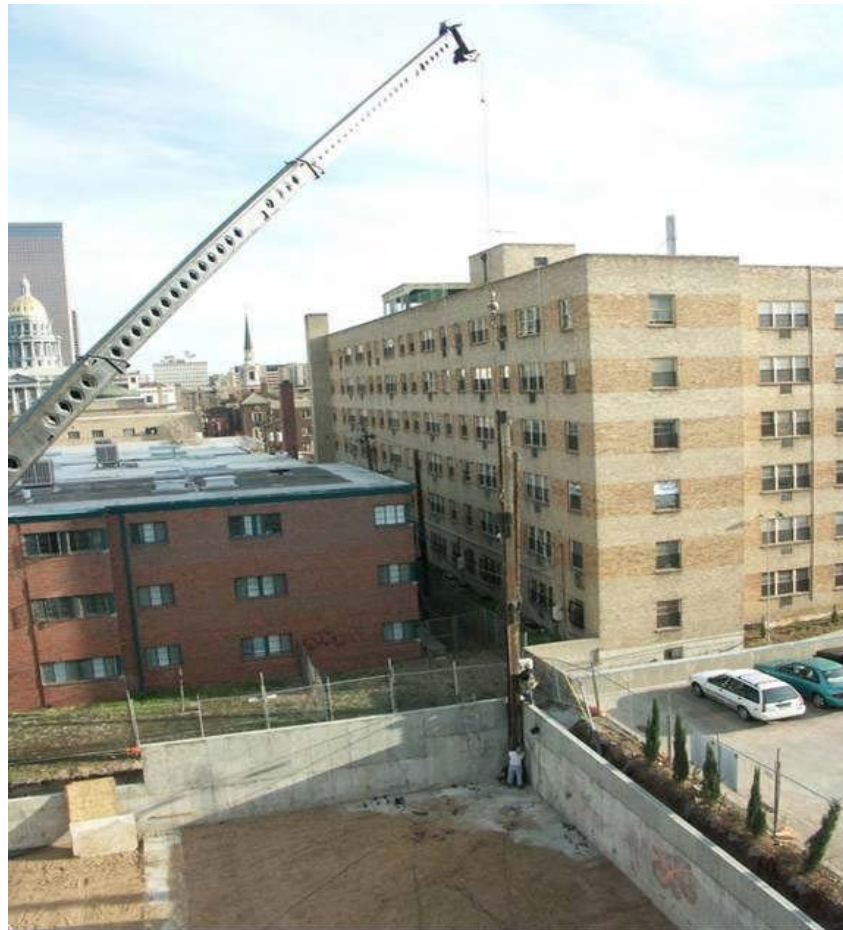


# Sustainable Sites

Achieved 6 points

Credit 8

*Light  
pollution  
reduction*

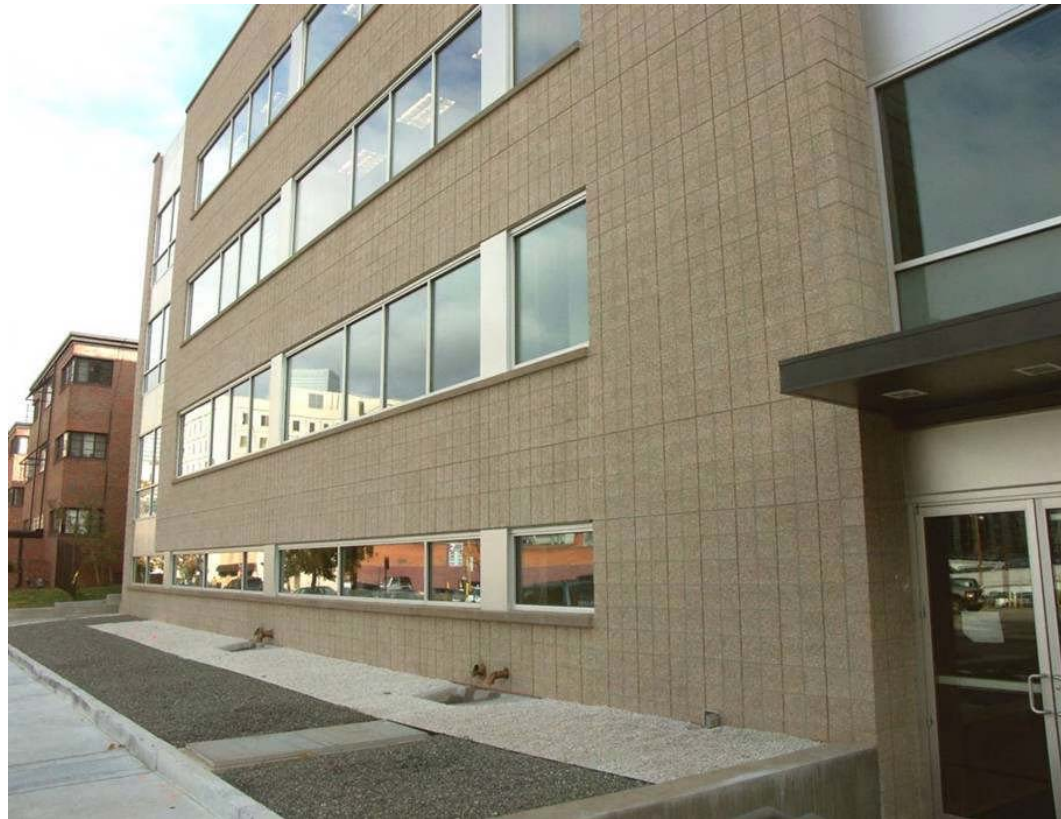


# Water Efficiency

Achieved 1 point

Credits 1.1  
and 1.2

*Reduce, don't  
eliminate  
irrigation*



# Water Efficiency

Achieved 1 point

Credit 3.1

*Water use  
reduction*

*Designed to  
reduce usage  
by 26.09%*



# Energy and Atmosphere

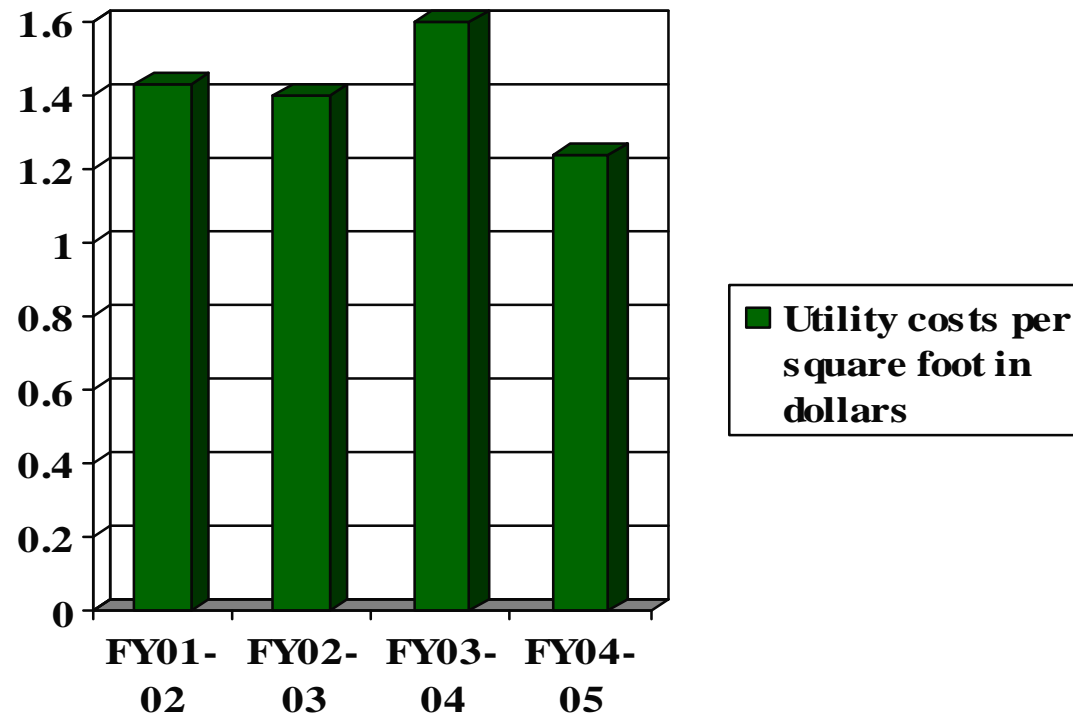
Achieved 4 points

Credit 1.1

(two points)

*Optimize  
energy  
performance*

*Designed to  
reduce usage  
by 21.3%*



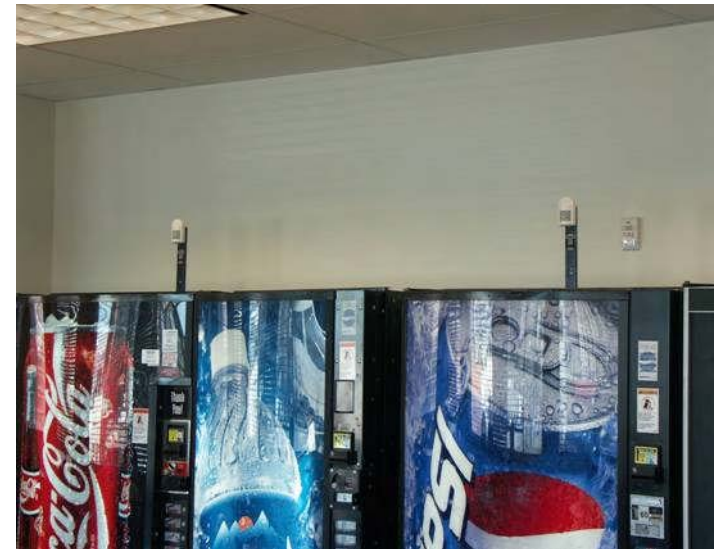
# Energy and Atmosphere

Achieved 4 points

## Credit 1.1

(two points)

*Optimize energy performance*





# Energy and Atmosphere

Achieved 4 points

Credit 3

*Additional  
commissioning*

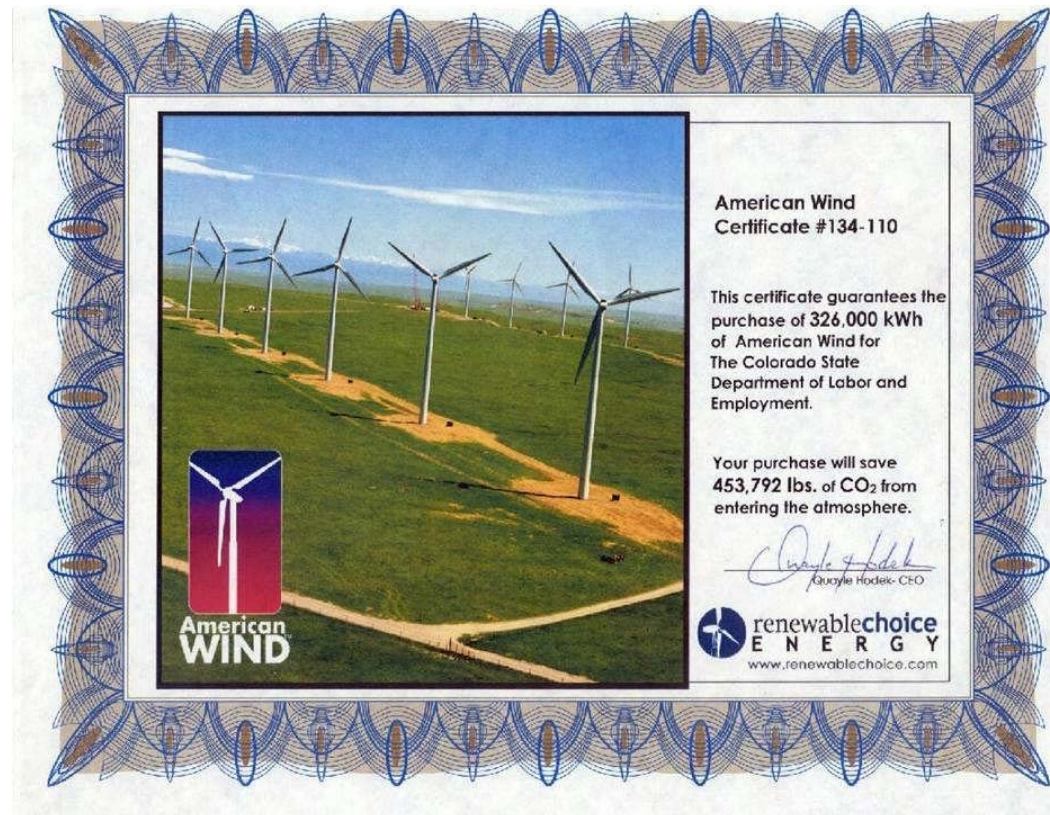


# Energy and Atmosphere

Achieved 4 points

Credit 6

*Green power*



# Materials and Resources

Achieved 5 points

Credit 2.1

***Construction  
Waste  
Management***

*1,374 tons of  
concrete recycled.*





# Materials and Resources

Achieved 5 points

Credit 2.1

***Construction  
Waste  
Management***

*52%  
construction  
waste diverted  
from landfill.*



# Materials and Resources

Achieved 5 points

Credits 4.1  
and 4.2

*Recycled  
content*





# Materials and Resources

Achieved 5 points

Credits 5.1  
and 5.2

*Local /  
regional  
materials*



# Materials and Resources

Achieved 5 points

Credits 5.1  
and 5.2

*Local /  
regional  
materials*



# Indoor Environmental Quality

Achieved 8 points

Credit 1

*Carbon  
dioxide  
monitoring*



# Indoor Environmental Quality

Achieved 8 points

Credit 3.2

*Construction  
indoor air  
quality  
management  
plan, prior to  
occupancy*



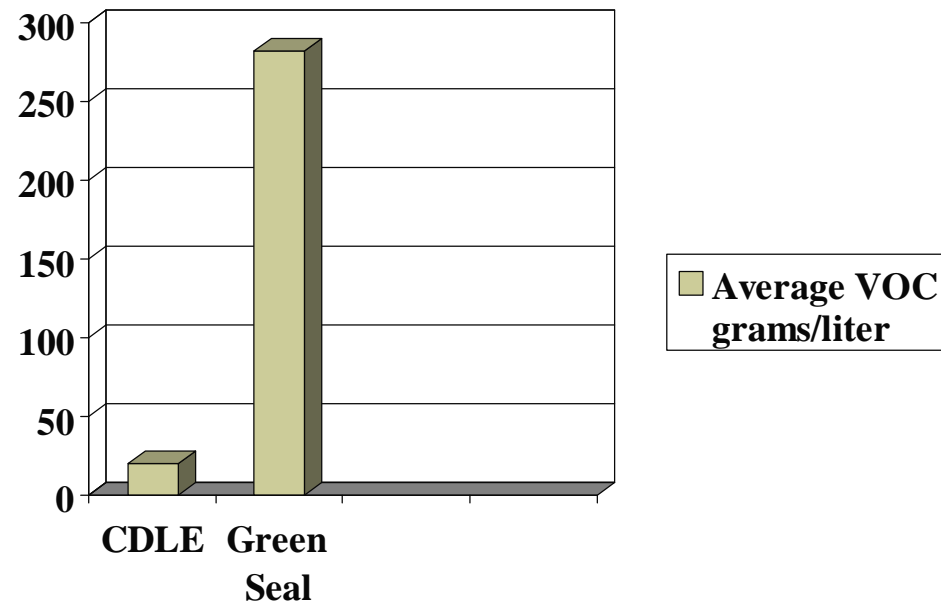
# Indoor Environmental Quality

Achieved 8 points

Credit 4.1

*Low-emitting  
materials,  
adhesives and  
sealants*

14 types of firestopping, caulking, silicone, adhesives, sealants used. Six of 14 products had no volatile organic compounds (VOC).





# Indoor Environmental Quality

Achieved 8 points

Zero VOCs in putty, primer, and paint

Credit 4.2

*Low-emitting  
materials,  
paints and  
coatings*



# Indoor Environmental Quality

Achieved 8 points

Credit 4.3

*Low-emitting materials,  
carpet systems*



# Indoor Environmental Quality

Achieved 8 points

Credit 5

*Indoor chemical  
and pollutant  
source control*



# Indoor Environmental Quality

Achieved 8 points

Credit 7.1

*Thermal  
comfort -zones*





# Indoor Environmental Quality

Achieved 8 points

Credit 8

*Daylight  
and  
Views*



# Indoor Environmental Quality

Achieved 8 points

Credit 8

*Daylight and Views*





# Innovation and Design Process

Achieved 4 points

Credit 1.1

*Innovation in  
design, green  
housekeeping*





# Innovation and Design Process

Achieved 4 points

Credit 1.2

*Innovation and  
design process  
– exemplary  
performance  
for materials  
and resource  
credit 5.1*

*Regional  
materials*

Product	Vendor
Concrete	Suburban
Precast concrete	ARCO
Precast components	Hall-Irwin
Concrete mix unit (CMU) exterior block	Basalite
Storefront, glass	Gump (Harmon)
Steel studs	Dietrich
Structural steel	Boulder Steel

# Innovation and Design Process

Achieved 4 points

Percent post-consumer / Percent post-industrial

Credit 1.3

*Innovation and  
design process –  
exemplary  
performance for  
materials and  
resource credits  
4.1 and 4.2*

*Recycled content*

Steel deck	40	55
Structural steel (Nucor)	80	10
Structural steel (IPSCO)	25	70
Structural steel (Chapparral)	25	65
Miscellaneous steel	25	0
Rebar	25	75
Hollow metal doors and frames	25	10
Steel studs	22.6	8.4

# Innovation and Design Process

Achieved 4 points

Credit 2

**LEED**  
**Accredited**  
**Professional**

*Technical Assistance provided by  
The Governor's Office of Energy  
Management & Conservation:*

- *High performance design grant*
- *LEED application review*
- *Training and testing fees for LEED AP accreditation*



[www.colorado.gov/rebuildco](http://www.colorado.gov/rebuildco)

# Lessons Learned

- ◆ *Design with LEED in mind.*
- ◆ *Document everything.*
- ◆ *Requires management support, not participation.*
- ◆ *Champion required.*
- ◆ *Use the experts.*
- ◆ *Use LEED as part of the decision-making process.*
- ◆ *LEED buildings are “normal” buildings, in fact they are great buildings.*
- ◆ *Be willing to make trade offs.*
- ◆ *Assume some credit submissions will be denied.*
- ◆ *LEED does not have to impact budget, schedule, or program.*
- ◆ *LEED principles can be applied to other projects.*

# Project Team

## **Colorado Department of Personnel and Administration**

State Buildings

Lance Shepherd, LEED AP, Architect

[Lance.shepherd@state.co.us](mailto:Lance.shepherd@state.co.us)

303-866-3450

## **Colorado Department of Labor and Employment**

Angie Fyfe, Project Manager

[Angie.fyfe@state.co.us](mailto:Angie.fyfe@state.co.us)

303-318-9324

## **Governor's Office of Energy Management and Conservation**

Linda Smith, LEED AP, Senior Project Manager

[Linda.smith2@state.co.us](mailto:Linda.smith2@state.co.us)

303-866-2100

## **David Owen Trbya Architects**

[www.dota.com](http://www.dota.com)

303-831-4010

## **Hadji Engineers**

[www.hadjiengr.com](http://www.hadjiengr.com)

303-293-3800

## **Hyder Construction**

[www.hyderinc.com](http://www.hyderinc.com)

303-825-1313

## **E-Cube, Inc.**

[www.ecube.com](http://www.ecube.com)

303-443-2610



